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XCIX. *Extract of a letter from M. de la Lande, of the Royal Academy of Sciences at Paris, to the Rev. Mr. Nevil Maskelyne, F. R. S. dated Paris, Nov. 18, 1762 *.*

S I R,

Read Nov. 25, 1762. **I** AM glad that you have proved, from your own experience, the exactness of the observations of the distance of the moon from stars for finding the longitude at sea, as M. de la Caille had done in 1753. I am as fully convinced as you can be of these advantages, and am not a little pleased to learn that you are about printing a concise method of computing the corrections of refraction and parallax.

In the sector, which our members of the academy carried with them to the north, the plumb-line

* This letter I received from M. De la Lande in answer to one I had wrote to him, "in which I proposed to him, to make observations at Paris, in correspondence with others made here, of occultations of fixed stars by the moon; in order to determine the exact difference of longitude betwixt London, Paris, and Greenwich: which is not yet certainly known with that accuracy which the nicety of modern astronomy seems to require; and at the same time desired him to look out for the most convenient opportunities for this purpose, by means of the calculations contained in the French almanack, called the Connoissance des Temps, of which he is the editor."

Nevil Maskelyne.

descends from an angle, as in the figure, so that it is obliged to fall into the vertex of the angle, and moreover it passes over a point A, with which it is made to correspond, by the help of a microscope. It is a pity that Mr. Siffon neglected so essential a circumstance in your sector, but that is not your fault. The sector, with which M. de la Caille made all his observations, and which is come into my hands since his death, has a fine needle at the center, from which the silver wire is suspended by a loop, thus - - - - -



M. Pingre, who is returned from the island of Rodrigues, has found the parallax of the sun to be the same as I have done, namely $9'' \frac{2}{3}$. I am not surprised that you find it to be only $8'' \frac{3}{5}$, since the Swedish observations, which appear to me to be very good, make it still less than you have found it. These uncertainties arise from our not having the difference of the meridians of the Cape, Rodrigues, Tobolski, Paris, and London well determined. You are therefore quite right to collect together the observations of Jupiter's satellites, which will serve to find these longitudes. I thank you for those which you have sent me, and I have hereto added those of the first satellite which were made at Paris in 1761, for one can scarce employ any but these for this purpose.

On the 19th of July 1763 we shall have an occultation of antares by the Moon, on the 2d of November an occultation of Mars, on the 8th of September one of mercury: they will be very proper for determining the difference of longitude between London and Paris. In 1764 there will be a still greater

number.

number. But if you have an inclination to undertake a labour of this kind, you may meet in the memoirs of the academy with occultations of stars observed at different times, and find some corresponding ones made at London, from whence you may deduce the difference of the meridians of these two cities, which we may be ashamed to say we are uncertain of to 20". For whether it be 9' 15" or 9' 40" is difficult to determine: I mean of Paris and Greenwich.

I am,

Yours, &c.

De la Lande.

Observations of the 1st Satellite of Jupiter.

1761.				h	'	"	
July 22.	Im.	12	45	30			Some clouds. Gregorian telef. of $2\frac{1}{2}$ ft.
July 29.	Im.	14	39	13			Great telef. of 5 feet of Mr. Short's.
Aug. 14.	Im.	12	56	21			Newtonian telescope of $4\frac{1}{2}$ feet.
Aug. 21.	Im.	14	52	20			Gregorian telescope of $2\frac{1}{2}$ feet.
Aug. 23.	Im.	9	21	8			Thro' vapours. Greg. telef. of $2\frac{1}{2}$ feet.
Sept. 8.	Im.	7	42	7			Gregor. tel. $2\frac{1}{2}$ feet.
Sept. 15.	Im.	9	39	48			Gregor. tel. $2\frac{1}{2}$ feet.
Sept. 24.	Em.	8	17	26			Gregor. tel. $2\frac{1}{2}$ feet.
Sept. 29.	Em.	15	45	18			Some vapours. Gregor. tel. $2\frac{1}{2}$ feet.
Oct. 1.	Em.	10	14	9			Gregor. tel. $2\frac{1}{2}$ feet.
Oct. 17.	Em.	8	36	25			Gregor. tel. $2\frac{1}{2}$ feet.
Oct. 31.	Em.	12	28	7			Gregor. tel. $2\frac{1}{2}$ feet.
Nov. 9.	Em.	8	52	12			Gregor. tel. $2\frac{1}{2}$ feet.
Nov. 16.	Em.	10	47	22			Tel. of 25 ft. refractor. a little doubtful.
Nov. 18.	Em.	5	15	30			Thro' vapours. Gregor. tel. $2\frac{1}{2}$ feet.
Dec. 6.	Em.	7	16	0			Thro' clouds. Gregor. tel. $2\frac{1}{2}$ feet.

I beg you will answer for me the questions proposed to me by our worthy friend Dr. Morton on the part of Mr. Dunn. I observed the exit of Venus at Paris with a telescope of 18 feet, and an eye glass of $2\frac{1}{2}$ inches focus, and with a smoaked glass which was sufficiently dark, but I was not uncertain so much as a single second. M. Messier observed with a Gregorian telescope of $2\frac{1}{2}$ feet, magnifying very nearly the same as mine, and he agrees very well with me. M. Maraldi had a refracting telescope of 15 feet, but he was tired at the time; and M. de la Caille had a refracting telescope of Mr. Dolland which was not well put together, and did not terminate objects distinctly. I took for the moment of the contact the 1st instant of Venus's limb raising the sun's limb in the slightest manner. The account of these observations will be in the memoirs of the academy for 1761, which is almost printed off.

We reckon the longitude between Greenwich and Paris to be $9^{\circ} 20''$: but I do not know what are the observations upon which it is founded. The preceding observations will contribute hereto.